OHIO CREDIT UNION LEAGUE

CECL: Determining Correct Segments for Loss Pooling

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THE POWER OF PARTNERSHIP

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Agenda

1. CECL is a Nutshell

2. What to Make of the New Timeline

3. Why you Should Segment Your Portfolio

4. The Risks of Over-Segmentation

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What's Changing with CECL?

Today's Incurred Loss Approach vs CECL

INCURRED LOSS	CECL
Recognize losses when accounts exceed **"Probable Threshold of Loss"**	Estimate losses from loan **origination**
Estimate losses over **"loss emergence" period**	Estimate **lifetime** losses - **Forecast** over reasonable & supportable (R&S) period - **Revert to history** afterward
Rules-based, prescriptive	**Principles-based** • Flexibility by portfolio size and complexity
Backward-looking	**Forward-looking** • Remaining life
Requires **transparency** in assumptions	Requires **transparency**

CECL 'Go Live' Date for CUs is Now 2023

But Start Preparing TODAY!

- Implementations of CECL are taking time – collecting and **understanding data requirements** and gaps to create a reasonable estimate is KEY.

  CECL was finalized in 2016. SEC filers have had three years to accomplish CECL and still struggling.

- SEC filers (non-SRC) will produce **CECL disclosures in six months.** This will create tremendous pressure from regulators, auditors and the overall market.

- Most professional forecasters are predicting **a turn in the economy**. Preparing for CECL automatically prepares companies to answer questions about adequate allowance, profit and capital amounts.

- FASB wants entities to focus on **CECL impacts "beyond the accounting"** – CUs will have to understand all impacts of the CECL estimate and not just produce a CECL number.

- **START TODAY!!**

FASB Guidelines on Segmentation NOT Prescriptive

§326-20-55-5 In evaluating financial assets on a collective (pool) basis, an entity should aggregate financial assets on the basis of similar risk characteristics, which may include any one or a combination of the following (the following list is not intended to be all inclusive):

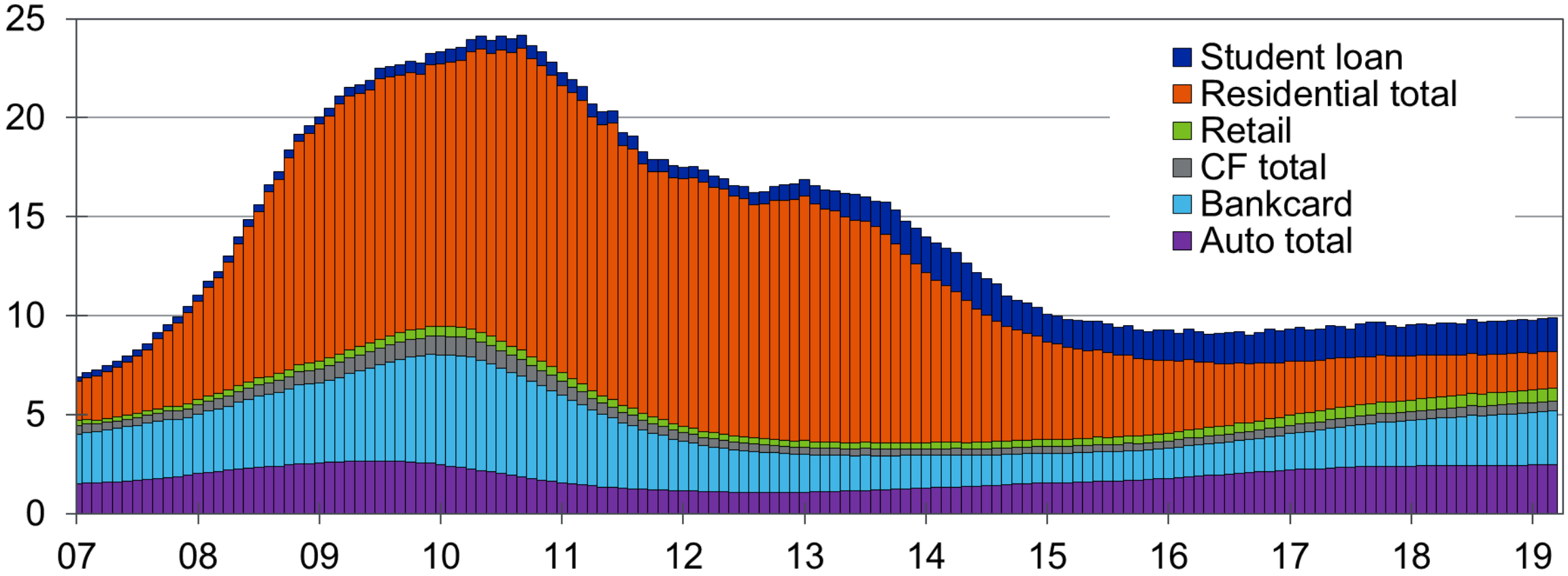
- Internal or external (third-party) credit score or credit ratings
- Risk ratings or classification
- Financial asset type
- Collateral type
- Size
- Effective interest rate
- Term
- Geographical location
- Industry of the borrower
- Vintage
- Historical or expected credit loss patterns
- Reasonable and supportable forecast periods.

Segmentation Considerations

- Intuitive to credit officers and lenders
- Portfolio Materiality
  - Total exposure ($) and potential for loss
  - Part of near-term strategy?
- Should be supported empirically (i.e., statistically linked to credit risk behavior)
  - Long-Run PD, EAD, LGD
- Available data
- Responsiveness to economic conditions
- Model complexity
  - exogenous vs. endogenous

Common Retail Product Segmentation

Default balances, $ bil, 12-mo MA



Sources: Equifax, Moody's Analytics

Common Retail Product Segmentations

Auto / Recreational	Loans, Leases, New Car/Used Car, RV, Boat, Motorcycle
Card (Bank Card, Retail Card)	Promo/Non-promo, Transactors/Revolvers, New/Existing Accounts, Secured/Unsecured
Consumer Loans / Personal Finance	Secured/Unsecured, Installment/Revolving
Mortgage	First Lien/Second Lien, Fixed/ARM, Conforming/Non-conforming
Home Equity	HELOC/HELOAN, First Lien/Second Lien
Student Loan	Private/Gov't, Different Repayment Plans, Refinance, Deferment, Forbearance

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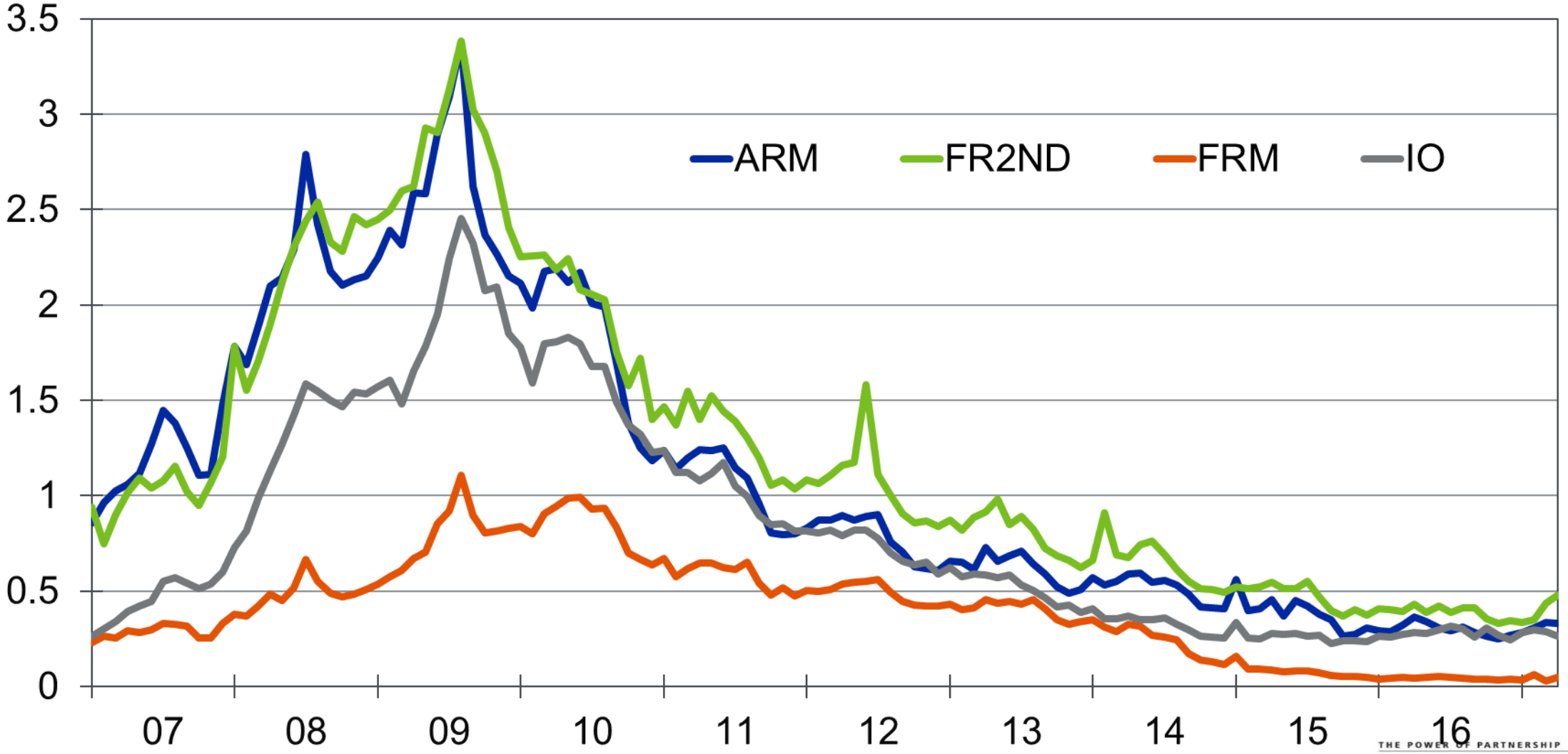
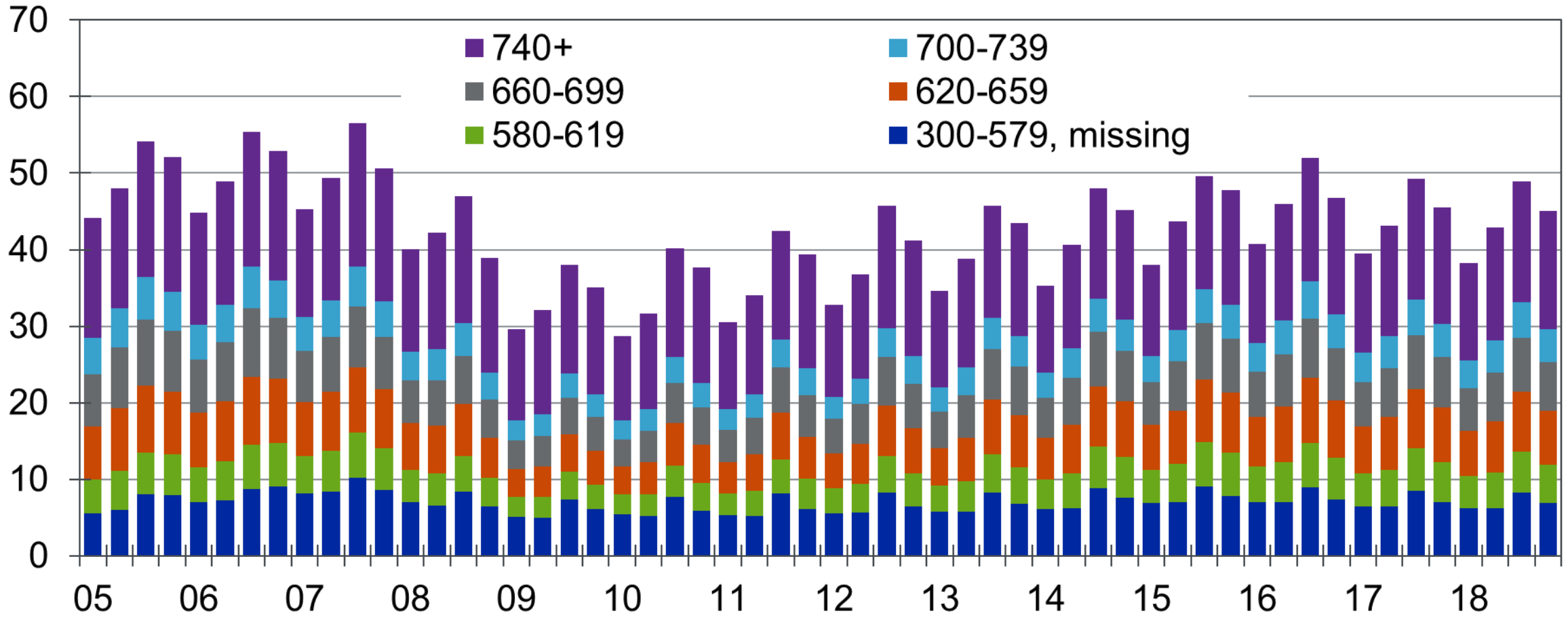
Mortgage PDs (%) Differ by Product



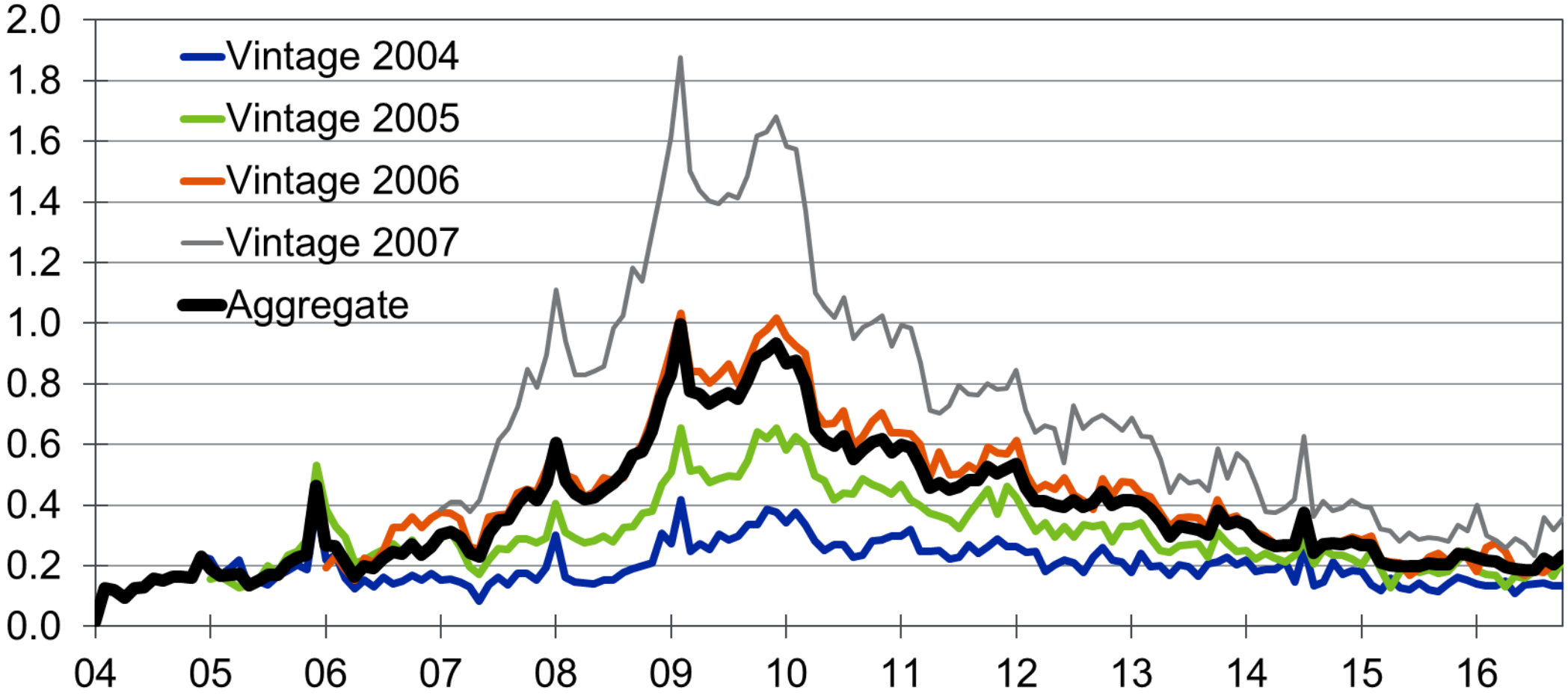
Sources: RMBS, Moody's Analytics

Total Originations by Credit Score, mil accounts



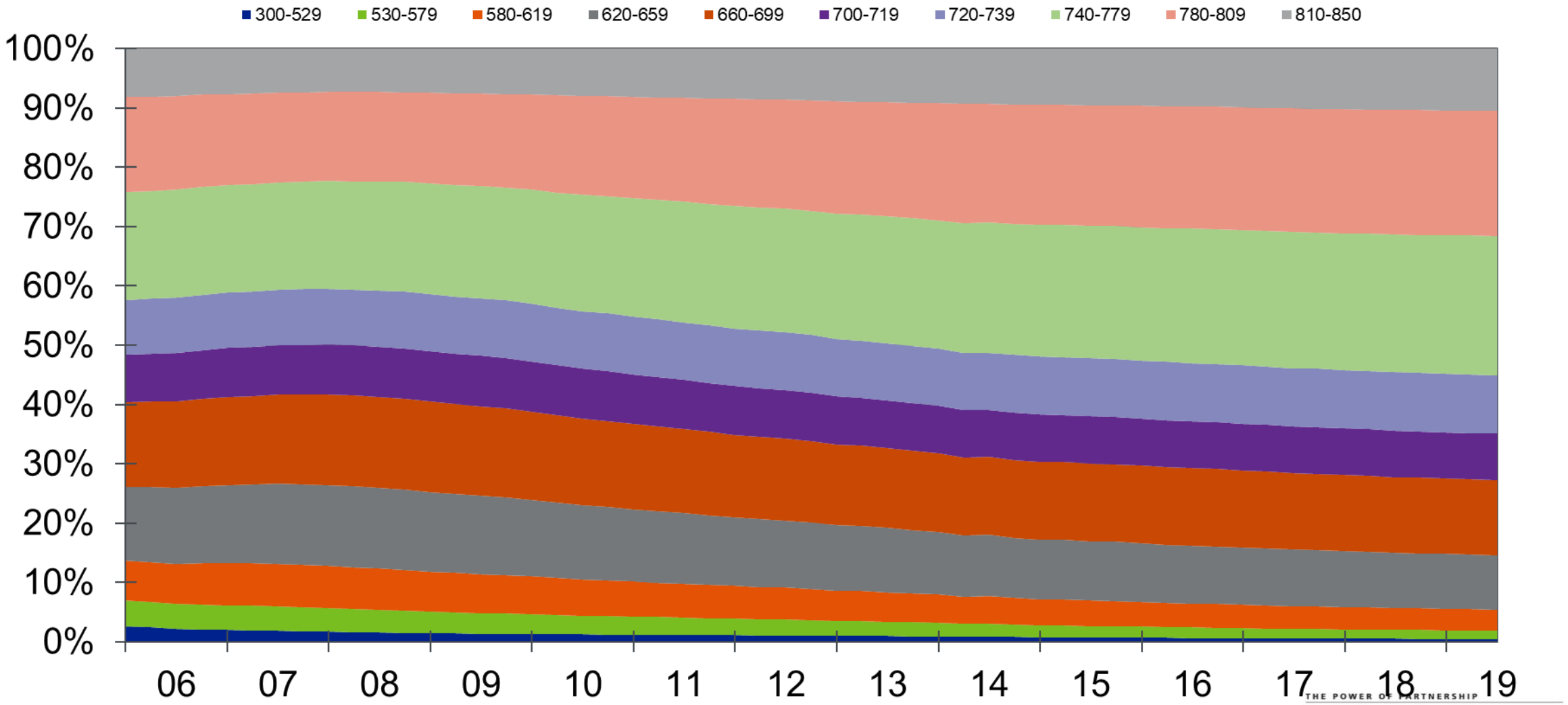
Sources: Equifax, Moody's Analytics

Aggregate vs Vintage PD (%) for First Mortgage



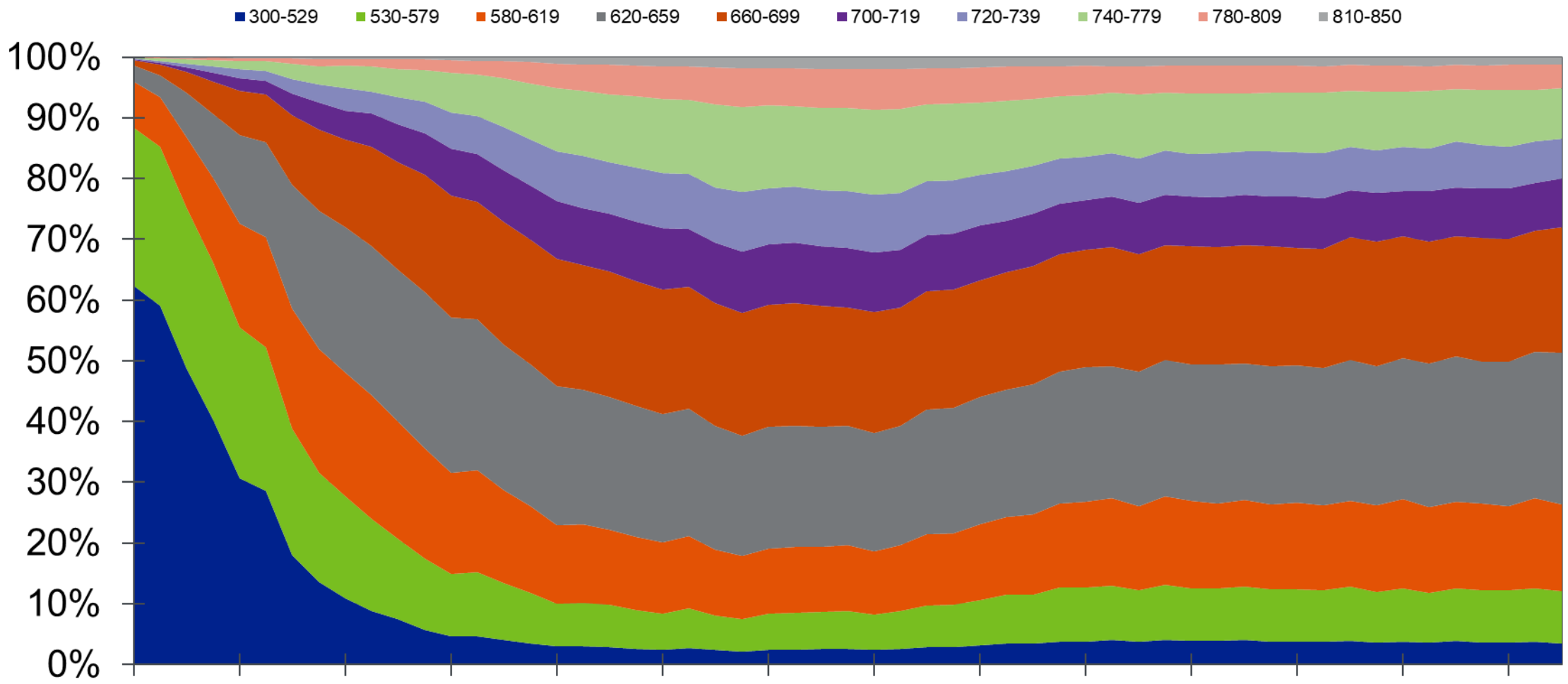
Sources: RMBS, Moody's Analytics

First Mortgage, Balance Concentration By Risk Band



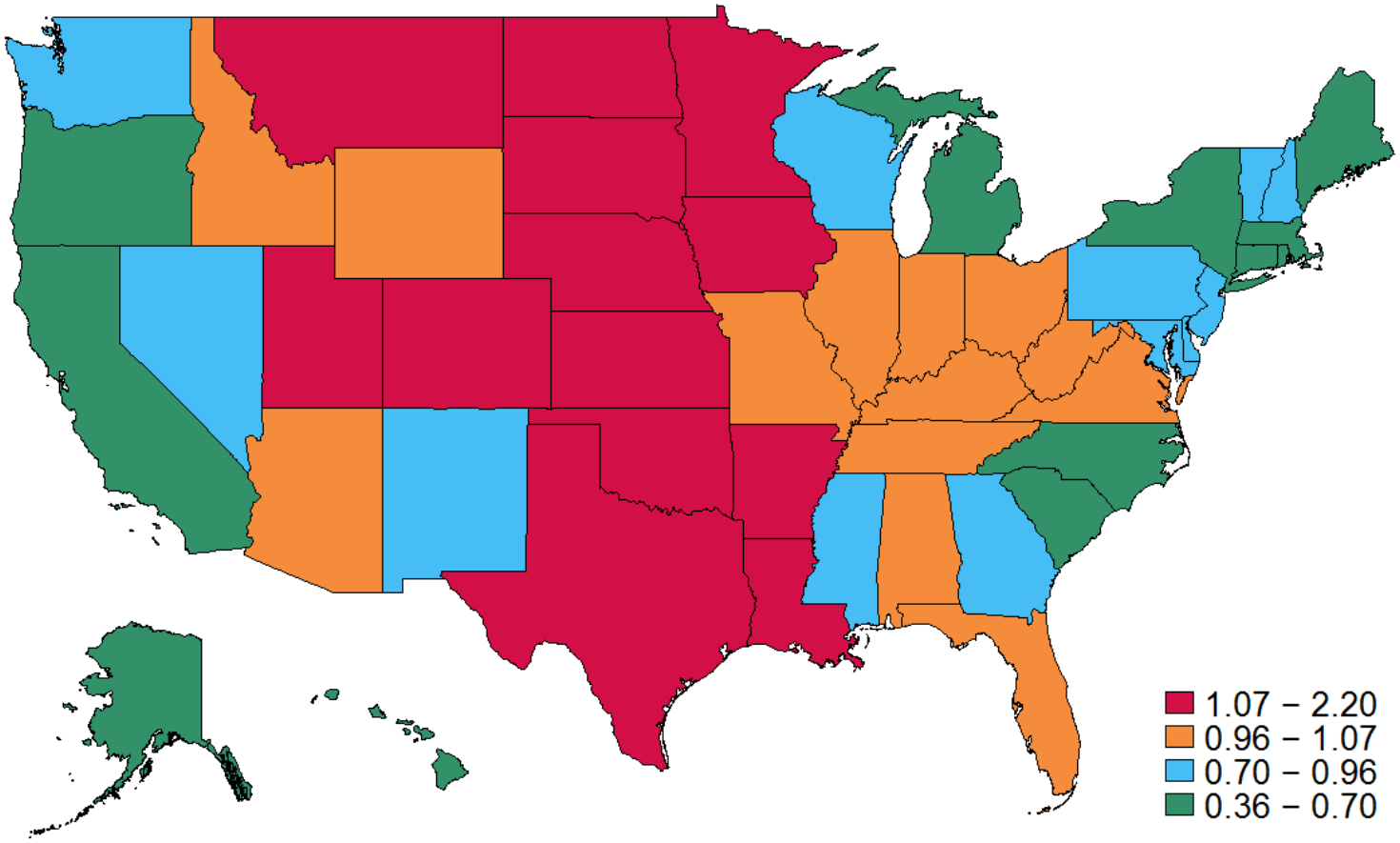
Sources: Equifax, Moody's Analytics

First Mortgage, Loss Concentration By Risk Band



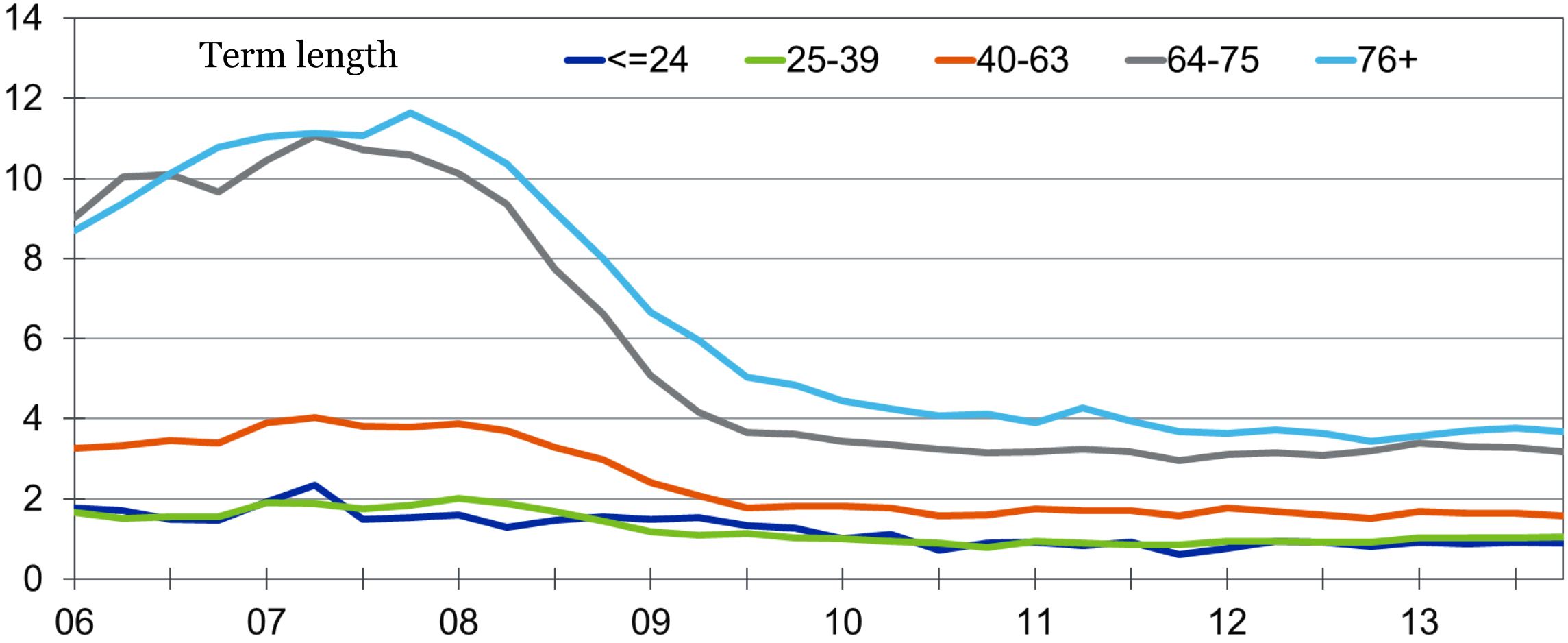
Sources: Equifax, Moody's Analytics

First Mortgage ECL Rate (%), Credit Score 740-779



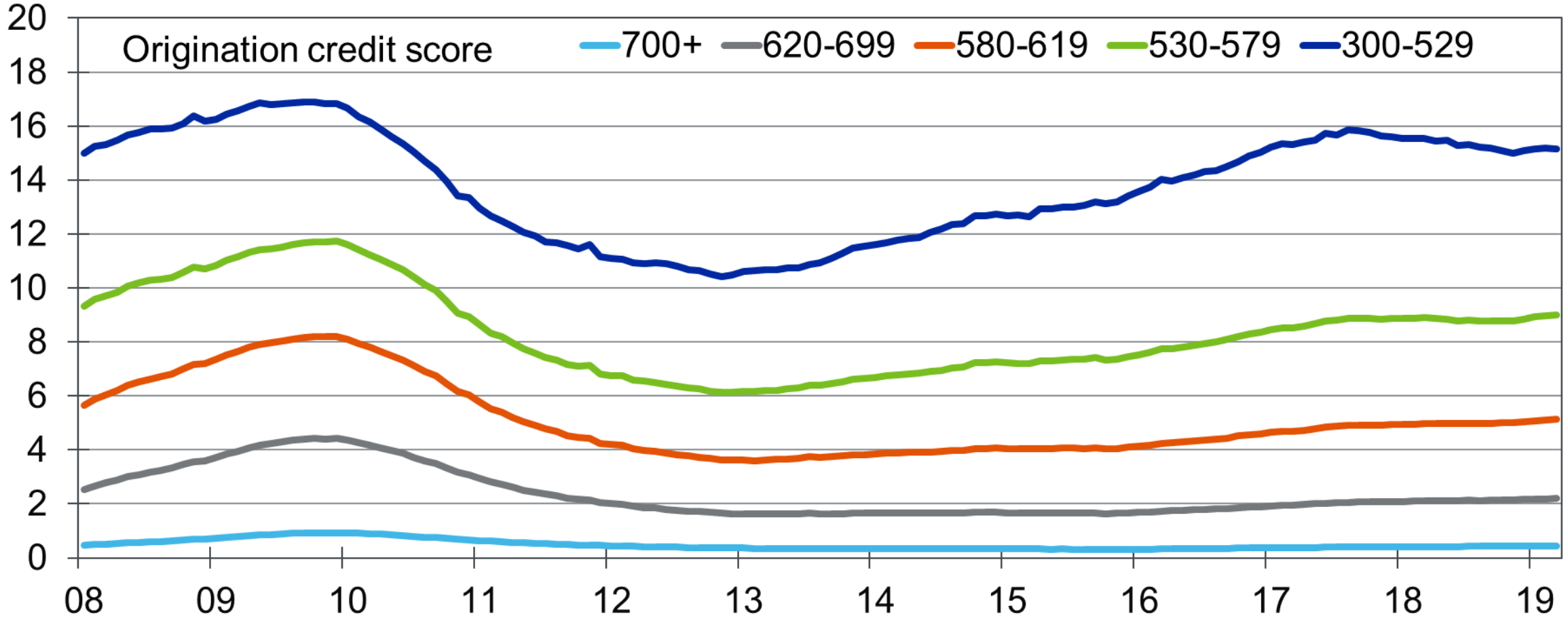
Sources: Equifax, Moody's Analytics

Auto Lifetime Default Rate, % of $, Orig Vintage



Sources: Equifax, Moody's Analytics

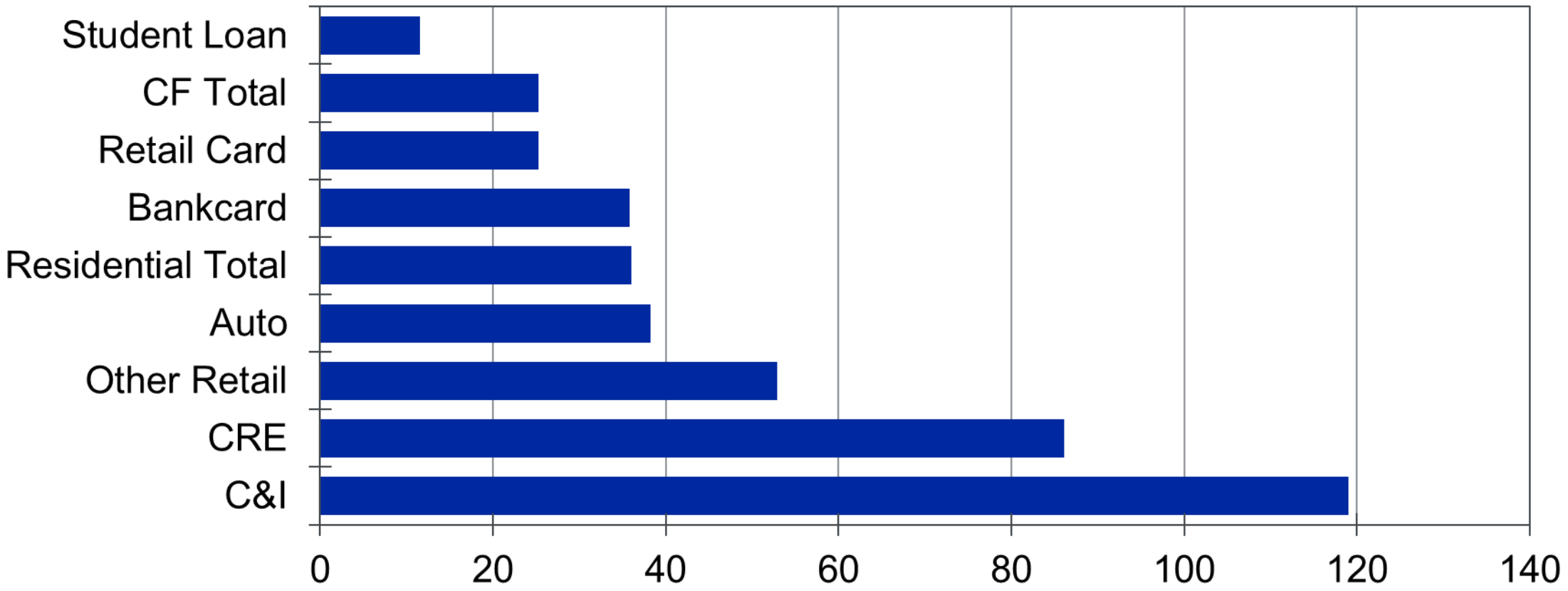
Auto Default Rate, % of Dollar Volume, 12-mo MAAR



Sources: Equifax, Moody's Analytics

ECL Volatility by Product Category

% difference between Moody's S3 and S1 ECL, 19Q1 measurement



Sources: Equifax, Moody's Analytics

Distribution of 2010 Auto Loans by Risk Score and Term

	2010 % Volume of Accounts						
	Term						
Score Band	MISSING	<=24	25-39	40-63	64-75	76-84	85+
Missing	0.024%	0.140%	0.306%	0.563%	0.191%	0.009%	0.003%
300-529	0.059%	0.507%	1.191%	1.867%	0.824%	0.026%	0.023%
530-579	0.128%	0.694%	1.133%	2.423%	1.862%	0.048%	0.017%
580-619	0.160%	0.671%	1.156%	2.947%	2.818%	0.107%	0.018%
620-659	0.233%	0.712%	1.801%	5.143%	4.743%	0.268%	0.038%
660-699	0.225%	0.542%	2.064%	5.958%	4.984%	0.336%	0.051%
700-719	0.104%	0.213%	1.086%	3.210%	2.312%	0.171%	0.027%
720-739	0.104%	0.213%	1.263%	3.670%	2.307%	0.172%	0.026%
740-779	0.177%	0.380%	2.733%	7.471%	3.766%	0.257%	0.040%
780-809	0.136%	0.353%	2.730%	6.932%	2.724%	0.169%	0.029%
810-850	0.089%	0.318%	2.551%	5.484%	1.674%	0.086%	0.015%

Sources: Equifax, Moody's Analytics

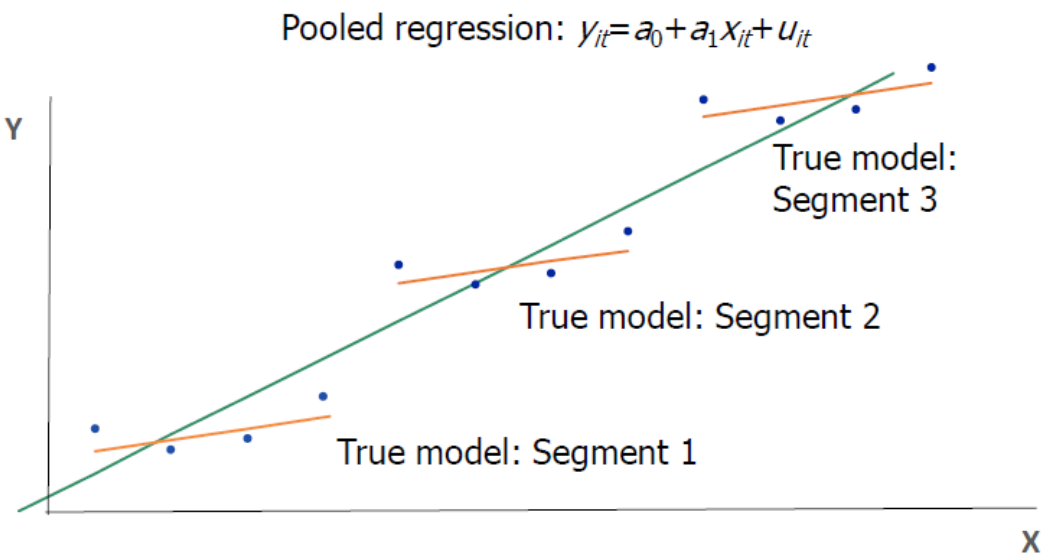
The Risk of Segmentation

- Segments with too few data will pick up noise, produce estimates which are not robust
- Trend appears in each segment, but disappears or reverses in the combined sample

  (Simpson's Paradox)

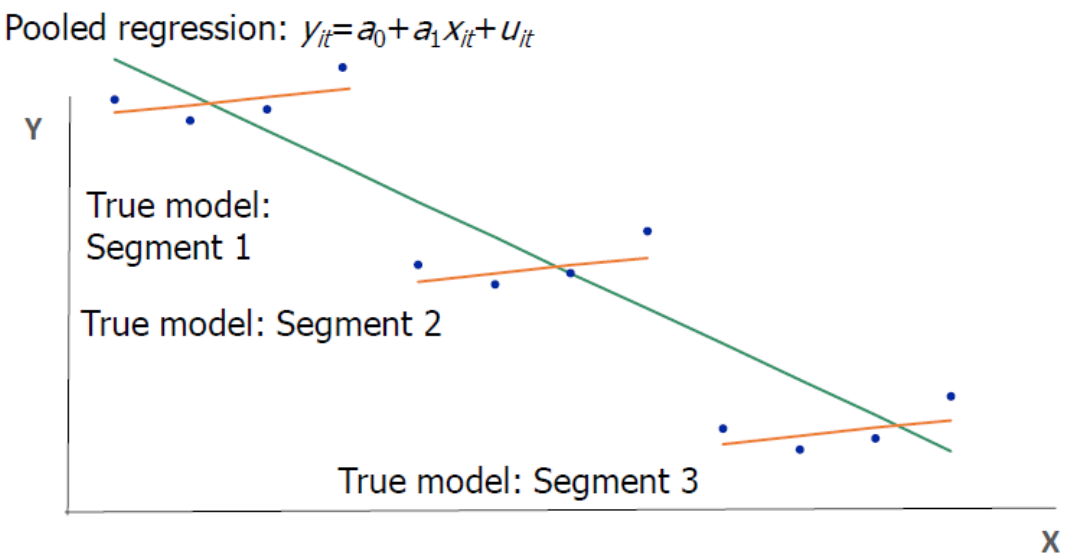
Simpson's Paradox

Chart 1: Different Slopes, Same Sign



Source: Moody's Analytics

Chart 2: Different Slopes, Different Signs



Source: Moody's Analytics

Conclusions

- CECL standards are not prescriptive
- Proper segmentation can improve forecast accuracy if model is constructed appropriately.
- Risk differentiation and economic responsiveness are key considerations when selecting a segmentation scheme.
- Choosing the best segmentation depends on many parameters: data availability, size and complexity of a portfolio, business needs, development, implementation and production cost, etc.

For More Information

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